



## Managing DC Energy



Our modular  
system for safe  
brake resistors

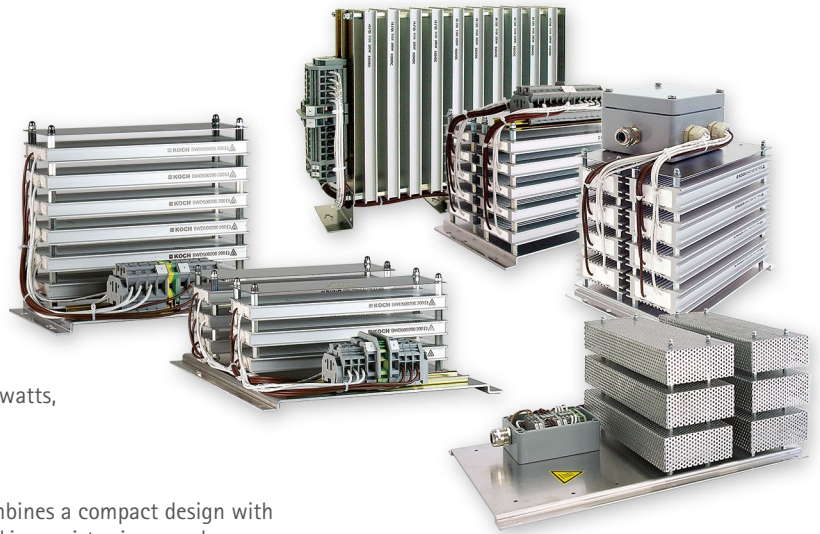
BWx...K...R...

# Our modular system for safe brake resistors

We manufacture resistor combinations by an extensive set of accessories for high performance applications.

The modular system is based on individual modules of the BWD series 250 to 1000 with nominal output of 100 to 400 watts, which individual specifications can be found in the brochure „Safe brake resistors in wire-wound technology“.

In addition to its high performance, this modular system combines a compact design with extreme flexibility. This results in the optimization of the braking resistor in accordance with the specifications of each individual application.



## Optimized to the requirements of your application:

- Required power - no „unnecessary over-dimensioning“
- Many resistance values - based on the inverters requirements
- Mechanical design - according to the existing installation space
- Assembly - horizontal or vertical
- Protection class IP 20 or IP 65\* - according to installation location and environmental conditions
- Individual modules with UL and CSA standard approval
- Several braking resistors in a resistor combination, e.g. for moving and hoisting gear
- Optional: Temperature switch, strain relief, protective cover, etc.



## Technical specifications of individual modules

( $\vartheta_A = 20^\circ\text{C}$ , unless otherwise specified)

Parameter	Symbol	Value	Unit	Conditions
Tolerance (resistance)		$\pm 5$	%	Room temperature
Insulation resistance	$R_{iso}$	$\geq 100$	$M\Omega$	$U_{mess} = 1,000 \text{ VDC}$
Inductance	$L$	$\leq 30$	$\mu\text{H}$	$f = 300 \text{ kHz}, U_{mess} = 50 \text{ mV}$
Capacity against enclosure	$C$	$\leq 300$	$\text{pF}$	$f = 300 \text{ kHz}, U_{mess} = 50 \text{ mV}$
Thermal time constant	$\tau$	approx. 550	s	BWD250/500
	$\tau$	approx. 600	s	BWD600
	$\tau$	approx. 850	s	BWD1000
Energy absorption BWD250	$Q$	4	$\text{kJ}$	with 1.2 s (1% duty cycle)
		8	$\text{kJ}$	with 7.2 s (6% duty cycle)
Energy absorption BWD500	$Q$	7,5	$\text{kJ}$	with 1.2 s (1% duty cycle)
		15	$\text{kJ}$	with 7.2 s (6% duty cycle)
Energy absorption BWD600/1000	$Q$	13	$\text{kJ}$	with 1.2 s (1% duty cycle)
		26	$\text{kJ}$	with 7.2 s (6% duty cycle)
Maximum permissible operating voltage	$U_b$	$\leq 700 \text{ AC}$	V	Taking into consideration the „intrinsic safety“ according to cCSAus and UL
		$\leq 1,000 \text{ DC}$	V	
		$\leq 600 \text{ AC}$	V	
		$\leq 848 \text{ DC}$	V	
Isolation voltage	$U_{iso}$	$\geq 4,000 \text{ AC}$	V	$f = 50 \text{ Hz}; t = 1 \text{ s}$
Max. permissible case temp.	$\vartheta_c$	$\leq 250$	$^\circ\text{C}$	unobstructed convection
	$\vartheta_c$	$\leq 300$	$^\circ\text{C}$	unobstructed conv. (BWD1000)
Storage temperature	$\vartheta_s$	-25 ... +85	$^\circ\text{C}$	



\* Test conditions: Water jet from nozzle 6.3 mm inside diameter, flow rate 12.5 l / min +/- 5%, water pressure according to volume flow, distance 2.5-3m, test duration 3min

## Brake resistor combination BWx...K...R...

Short-circuit-proof, „intrinsically safe“ resistor for operation with drive controllers (brake transistors), consisting of single resistor modules of the BWD250/500/600/1000 series, installed in a subframe.

Single resistors in a subframe ideally fit between the mounting plate of the control cabinet and the inverter. Their design safes installation space and brings the ability to perfectly diffuse the generated heat of the resistor. They always come with protection class IP65\*.



### Rated power (kW)

0.1 - 0.8 or upon request

### Resistance (Ohm)

3 bis 830 or upon request

### Dimensions (mm)

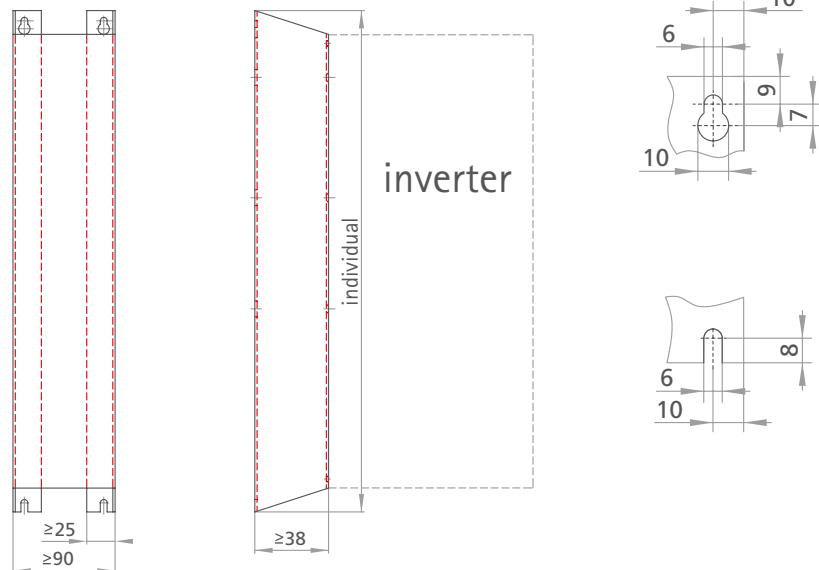
Individual dimensions possible.  
Available on request.

### Technical specifications

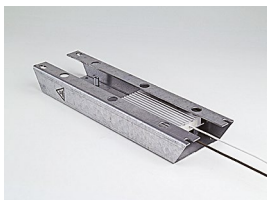
The technical data can be found on page 2 of this document. For the technical data of the single resistors see brochure „Safe brake resistors in wire-wound technology BWx“.

### Dimensions and mounting holes (mm)

Specific dimensions available on request



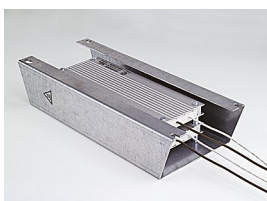
### Individual solutions



Series BWD250 in a single height subframe



Combination of two BWD250 in a double height subframe

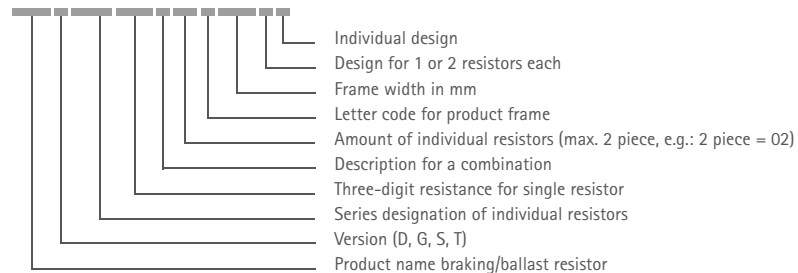


Combination of two BWD500 in a double height subframe

### Nomenclature

Brake resistor combination BWx...K...R...

#### BWD500100K02R1302K



\* Test conditions: Water jet from nozzle 6.3 mm inside diameter, flow rate 12.5 l / min +/- 5%, water pressure according to volume flow, distance 2.5-3m, test duration 3min

## Managing DC Energy

### Active Energy Management Solutions and Safe Brake Resistors for Electric Drives

We offer:

- **Tested product quality**
- **Certified processes**  
– we undergo regular inspections by third parties
- **Individual application support**  
– owing to our modular system we can offer more than 60.000 solutions
- **Machine-specific implementation**  
– we match our products with your machines
- **High reaction rate**  
– we provide you with a suitable offer in the shortest possible time
- **Short delivery times**  
– all components are available from stock
- **On-time deliveries every time**  
– we deliver on schedule in optimal lot sizes
- **Reliable partner**  
– we strive for long-term business relationships
- **Direct customer relationships**

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We look forward to hearing from you!



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Subject to technical changes. MK\_DAT\_BWX\_K\_R\_ENG\_R00\_1

